scientific

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL, AND OTHER IMPROVEMENTS.

VOLUME XI.

NEW-YORK, SEPTEMBER 6, 1856.

NUMBER 52.

Scientific American,

PUBLISHED WEEKLY
At 128 Fulton Street N.Y. (Sun Buildin BY MUNN & COMPANY.

TH S. H. WALES A. E. REACH Agents

Federhen & Co., Boston . Dester & Bro., New York A. Winch, Philadelphia | E.E. Fuller, Halifax, N. A. G. Courtensy, Charleston . S. W. Pease Cincinnatio. Responsible Agents may also be found in all the princip 1 cities and towns in the United States. Single copies of the paper are on sale at all the periodical stores in this city, Trooklyn, and Jersey City. TERMS—#22 a-year,—#81 in advance and the remainder in six months

Remedy for the Yellow Fever.

A correspondent of the New York Herald sends the editor the following:

" A few years ago I fell in company with a very intelligent captain of a merchant ship who had made many voyages to the West Indies, and also to the coast of Africa, and he informed me that as an antidote to the fevers prevailing in these climates, he always took with him a large bottle of pulverized charcoal, of which he gave his crew a teaspoonful three times a day, in a glass of water, and he never lost a man by the yellow fever, though other ships were daily losing their men. Should any one have faith to try this, with good effects, I hope it may be published to the world?

[As the yellow fever has lately appeared in few localities in this country, the above will be interesting. We have little faith, however in its utility.]

The Inventor and his Fly Trap.

The following good story is told by the ew Haven Register: "Bishop went down to New Haven Register: "Bishop went down to New York with one of his patent fly trap machines, which makes the fly catch himself by a revolving cylinder. A butcher was very de sirous he should set it agoing in his shop, and in the course of half an hour something less than a peck of flies had been 'hived.' The butcher was pleased, but concluded, as his files were 'all trapped,' he 'didn't want the machine.' 'Very well,' said Bishop, 'I'm a Yankee, and I won't take any advantage of you by carrying off your flies,' and drawing the slide, he liberated the whole swarm about the butcher's ears, and beat a retreat under cover of a little the loudest buzzing ever heard in that vicinity."

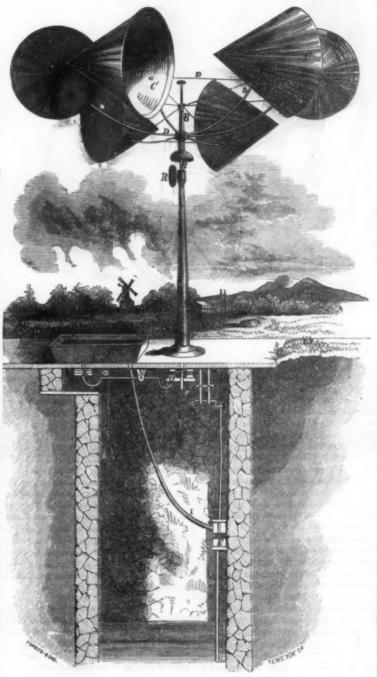
Cattle at the Paris Asricultural Exhibition.
The finest cattle exhibited at the above named exhibition, recently held in Paris, were what are called the "Angus breed." They surpassed the Durhams and Herefords, and were the objects of general admiration. They have no horns, and are mostly spotted-black and white. They are raised in the counties of Forfar and Kincardine, in the north Great

Yankee Washing Machines Abroad.

A late number of the London Times con tains a long notice of Hollingsworth's Washing Machine, which, it appears, has found its way across the Atlantic. In this machine a number of buoyant balls made of wood, are employed as rubbers. The inventor, Mr. ristopher Hollingsworth, is a farmer of Indiana. The Dutchess of Sutherland and others of the nobility appear to have taken quite diana. a fancy to the contrivance

The steamboat Glen Cove, running between this city and Albany, regales its passengers with music from a steam organ. It is heard at the distance of some miles before reaching the wharf playing "The Campbell's are Coming." The patent for this ingenious invention was secured through the Scientific American Agency for this country, and noticed on page 245 of the present volume. Patents have also dros een taken out in most European countries.

IMPROVED HORIZONTAL WINDMILL.



Our engraving illustrates an improvement for which letters patent were granted to Messrs. Jacob W. Goodwin and Moses C. Hawkins, of Edinburg, Pa., April 8, 1856.

The principal features of novelty consist in the employment of hollow cones to catch the wind, instead of flat vanes or sails; also in a peculiar method of regulation when applied to the pumping of water.

Referring to the cut, A is a hollow standard which supports the apparatus, B the revolving spindle to which the hollow wind cones, C, are connected and supported by means of rods, D. E is a force pump, operated by means of its piston rod, F; the latter rated by the crank shaft of the pinion H is a pinion on the lower end of revolv-G. ing spindle B. Pinion H gears with G, and thus the motion of spindle, B, and cones, C, is transmitted to the pump.

The regulation is done in the following

rod, extending from the bottom of bellows K to the end of brake lever, M. The latter is pivoted at N. and its forward end terminates just below the brake pulley, O, which is attached to spindle B. When the water rises in tank J to a given line, its weight expands the bellows, K, which, being connected with the end of lever L, the latter draws down the back end of M, while its front end rises and lifts pulley O, raising with it the spindle, B, and its pinion, H. The two, pinions, G H, are thus disconnected, and the pump stops, so that tank J cannot overflow. When pulley O is raised, the rubbing surfaces, P, come in contact with similar surfaces immediately above, and the friction of the two, being equivalent to the power just previously con sumed on the pump, the speed of the wind mill will continue the same as it was before the pump was disconnected. Q is a weight, atached by cord and pulley to the back end of ever M. When lever M is pressed down, lever M. manner:—The water rises from the pump, E, through pipe I, into tank J. K is a small hydrostatic bellows, connected by an opening with the bottom of the tank. L is a curved R is an adjusting screw, by means of which weight Q rises. Therefore the bellows, K, will not operate until the weight of the water in the tank overbalances that of weight Q. propriated 2,000 francs to make experiments R is an adjusting screw, by means of which with balloons, by M. Poitevin.

the rotation of the spindle, B, and of the whole apparatus, can be instantly shifted when desirable. The mouths of the cones being always presented to receive the wind. while the points move against the same, an effective power is obtained, no matter in what direction the wind is moving.

The windmill requires no vane or atte to bring it properly before the wind. It is self-acting in all respects, simple, durable, noiseless in operation, economical in manufacure. On the prairies, at railroad stations, and at all localities where power is needed for the raising of water or other purposes, it will be found highly useful. For further information address the patentees.

Recent Foreign Inventions

ng Fabrics by Superheated Steam .- J. L. A. Hulliard, of Paris, patentee.—In order to impart to cotton and linen cloth a beautiful smooth surface, it has to be singed to remove the long wool. This is commonly done by passing the cloth, in pieces, over jets of gas light—a very delicate operation—requiring the nice adjustment and running of the collers which guide the cloth. The invention of Hulliard consists in heating a metal plate with highly superheated steam, then passing the cloth over this plate. The improveme appears to be a good one. Wood can be mpletely charred with superheated steam onsequently its heat imparted to a metal plate may be expected to singe textile fabrics n a superior manner to jets of gas light.

Instead of employing starch and gum as a dressing for cotton and linen cloth, he uses the cyanides of zinc and tin, then passes the cloth over a cylinder in which superheated steam circulates, and the high heat of which oxydizes the metallic dressing, and gives to the surface of the cloth, when callendered a fine appearance.

Annealing Wire .- J. Cocker, of Liverpool, Eng.—This improvement consists in first heating the wire in an oven, then passing it into a closed chamber to cool so as to anneal it perfectly.

Varnish for Exposed Iron .- J. E. Cook, of Greenock, N. B., patentee .- This varnish consists of six pounds of gum shellac dissolved in a gallon of methylated spirit, or common wood spirit. This is stated to be an improved varnish for iron work exposed to a moist atphere where it is liable to rust.

(Methyle C.2 H.3) is a hypothecal base ot yet obtained separate, but its oxyd is easily obtained by distilling common wood spirit with alcohol. Wood spirit is formed by the destructive distillation of wood. The varnish is claimed to be of a superior quality for coating, plaster, and brick work, and silvered glass to prevent the action of moisture in the atnosphere

don, Eng., patentee.—This inventor claims the application of heated currents of air or steam in eight different methods, to iron and steel, in a molten state, in furnaces and crucibles, in order to free it from impurities and improve its quality. The injection of jets of steam into molten iron improves it, but the use of steam for this purpose is not new-only tha nethod.

Washing Textile Fabrics .- A. & J. Wallace, of Renfrew, N. B., patentees.—The claim of these inventors embraces the injecting of currents of hot air into the common dash wheels employed in bleach works for washing pieces of cotton cloth. A pipe passes into the dash wheel through a stuffing-box, and the hot air in driven through it into the apartments of the wheel.

Scientific American.

Mew Inbentions.

American Association for the Advancement

Gar Pikes .- Old-Fashioned Fish .- John E. Gavitt, Esq., of Albany, exhibited a vase of

young gar pikes, when Agassiz said :-"If it were announced that some of the old Egyptians were outside, he should not be able to keep his hearers inside. This apparition of the oldest fashioned fish alive was hardly less striking. There were very few less striking. types of this kind to be found among living fishes, but there were many among fossils. It had what other fish had not, a ball and socket joint in the neck, so that they could bow; this was common to them with reptiles. pectoral fins were small, and continually in a vibratory motion, like the cilia of anamalcules. In the Old Red Sandstone he had found a fish which he called Glypticus, with the same sort of a tail. This went with so many other things to show that the order of succession in past times was exemplified now in the development of individuals. Here were also two features observed in genuine reptiles, the pow-er of moving the head on the back bone, and the quasi tail. He noticed also that while these gar pikes had something approaching the reptile's apparatus for breathing they had gills as fully developed as those fishes which oreathed only through gills.

Col. Foster stated that in the Ohio strata

corresponding with the Onondaga limestone of New York, fossil gar pikes were found, and they were evidently a deep water fish, as this limestone must have been deposited in deep

Prof. Dana, from appearances on coral islands, argued that a very solid limestone, without ripple marks, might be deposited in water not deeper that 40 or 50 fathoms.

Prof. Hall said that the occurrence or ab-

ce of ripple marks was not an infallible mark of deep or shallow water. It was only when earthy deposits were made upon them that they were preserved.

Prof. Dawson, of Nova Scotia, inquired whether there was any particular adaptation of the gar pikes to their haunts, which are

Prof. Agassiz said that they bore some re mblance to alligators both in shape and habits, and that they haunted the same class

Comets .- Dr. Peters, of Cambridge, Mass read a paper on a comet discovered by himself at Naples in 1846. He has computed its exat Naples in 1846. He has computed its ex-pected places to 1860, and indicated upon a chart the limits of space within which it is to be sought at any specified time. He then spoke of the peculiar value of the periodic comets, as showing the nature of the interplanetary spaces, and of the real service which amateurs can render to astronomy by searching for comets. This work cannot be undertaken by those who are occupied in regular observans, and the comet medal of the King of Denmark was of great value in stimulating research by amateurs. As interest in science appears to be decreasing in Europe and inasing in America, Dr. Peters hoped that a similar medal might be proposed here.

Dr. Gould wished to express his sense of the gratitude due from astronomers to Dr. Peters for his services in these eleven years of labor upon the comet, and especially for the extreme beauty of the method of search proposed by Dr. Peters—the restricting of the probable field of the appearance of the comet at any day to a narrow line. He thought that the nonappearance of certain comets of short periods might arise from variations in the lum

Cyclones, or Typhoons on the North Pacific.— r. W. C. Redfield, of New York, read a paper on this interesting subject. It comprised no-tices of about thirty cyclones of violent character in the trade-wind latitudes of the North Pac fic. As regards the several months of the year, their occurrence was as follows: In February, one; April, one; May, two; June, two; July, three; August, four; September, four; October, six; November, four; December, one. At the Marian Islands, about latitude 13° N., they are looked for in December and January, as well as in the summer when the had concluded, Mr. Vaughan made the remark that an upward current of air

Immediately at the close of the paper, Dr. Hare asked Mr. Redfield what he meant by a cyclone. Mr. Redfield answered, a wind which moved in a curved line. The Dr. objected, in quite a long speech, to the theory and views part in the discussion.

would infallibly produce a whirlwind.

Dr. Hare replied: When you have read my

IMPROVED SEED PLANTING MACHINE.



New Broadcast Sower.

In this improvement the seed is deposited in a box, A, and flows down through a tube, B, into the curved hollow arm, C, by whose centrifugal motion the seed is scattered broadcast. The arm, C, is attached to the upright spindle, D, which is rotated with great rapidity, by means of pinions and gear wheels which derive power from the axle of the vehicle. The connections for this purpose will hicle. be readily apparent by reference to the cut. E is a lever by moving which the pinion, F, is instantly disconnected from the driving gear wheel, G, and the seed sowing appara-

tus brought to a stop.

The extremities of the arms, C, are furnished with valves, H, each of which is connected by means of rod and spring, I, and rollers, with a cam arrangement, K L, attached to the under side of the bottom board of box A. (See fig. 2.) The object of the valves and adjuncts is to regulate the quantity of seed sown per acre, and also to prevent the scattering of seed except from that end of hollow arm C which sweeps out at the rear of the machine. Were the seed allowed to escape indiscriminately from both ends of C, portions of it would strike the vehicle, or aninal, and be improperly scattered.

The tendency of the springs, I, is to keep

the valves, H, constantly closed, and they nev-er open except when the arm, C, revolves and brings friction rollers J against the cam sur-The duration of contact between the rollers, J, and cam surfaces is equivalent to the time occupied by the arm, C, in sweeping around the rear of the machine. The valves, H, are therefore open, and the seed escapes, when the extremity of arm C begins to emerge from beneath the seed box, A, but the valves instantly shut, when the extremity of C has finished its rear sweep and begins to go under box A again. The quantity of seed sown per acre is regulated by adjusting the nut, a, (fig. 2,) which releases or tightens the pressure of springs, I, on the valves, H.

The cam surfaces, K, it will be seen, are braned by bending the ends of the rods of which they are composed. Cam surface L is attached to a movable cross bar, M, one end of which is hinged to box A. A rod, N, extends from M to a point near the driver's seat within his reach. When he wishes to stop the discharge of grain he pushes rod N, and the city was never in a more healthy or formation address the inventor as above.

throws M out a little (fig. 2.) This carries the yoke, L, towards the outer ends of K, and they open so that rollers, J, when they come around, cannot touch the cam surfaces : consequently the valves, H, remain closed, and no

discharge of seed takes place.

This machine will sow all kinds of grain or grass seeds at the rate of from four to six acres per hour, doing the work in the most even and perfect manner. The patentee states that its cost is not much more than a common gig, for which the vehicle may also be used if desired, the seeding arrangement being so fixed as to be easily removed. Or the wheels of a common wagon may be conveniently applied during the seeding operation, thus saving a portion of the cost. Invented by Enos Stimson, North Craftsney, Vt., of whom, or of A. Stimson, Chicago, Ill., further inform can be had. Patented May 6, 1856.

The Scientific American

We cannot sufficiently draw attention to the advertisement of the Scientific American, published weekly at New York, the name of which indicates its character. It is the only paper of its kind in the United States, and we hardly think that its value is duly appreciated by mechanics and manufacturers of all degrees for it touches fully every appliance with which they are associated. It records all new inventions and discusses their character, and every amateur and practical mechanic in the atry should have the paper at his hand.-[Boston Courier, Aug. 28th, 1856.

[The above is only one out of hundreds of complimentary notices from the newspaper press which we might insert did our space permit.-Eps.

Yellow Fever.

A few cases of this dangerous disease ori-ginating from foreign vessels, have occurred at the New York Quarantine, and vicinity, eight miles from the city, giving rise to the most exaggerated statements. In some of the country districts it is rumored and believed that a most fearful epidemic is raging in this city, that the 1 eople are dying off like rotten sheep, and that sure death awaits all strangers

salubrious a condition than it is at the present

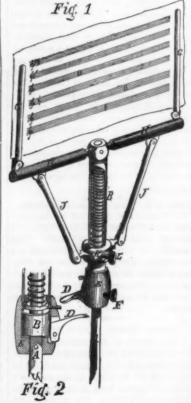
In Washhotah Valley, Utah, there are ten boiling springs, which are great natural cu-They are situated on the banks of a stream and pour out their waters seething hot, with a great noise. The waters hiss and dash over jagged rocks, and jets of steam hot emough to scald the hand are also forced out.
Deposits of sulphur and alum are found in their neighborhood, and the whole appearance of the region evince a powerful volcanic

Notices of cases sent to the Patent Office and of moneys received on account of patent business for the week ending August 30th, are necessarily deferred until next week.

Improved Music Holder.

By Thomas Ward, Birmingham, Huntington Co., Pa.—The object of this contrivan is to promote the convenience of band musi-It is intended to be attached to so suitable part of the instrument carried by the performer. The chief novelty consists in the combination of a spring or trigger with the spindle of the holder in such a manner that when the performer touches the trigger the spindle will instantly revolve and present the opposite side of the sheet of music to his eye, s preventing any interruption.

In our engraving, A is the spindle, covered at its upper part by a case, B. C is the spring, which is spiral in form and encircles spindle A. D is the trigger, pivoted to an adjustable hub or boss, E. F is the screw for adjusting E. The lower part of case B fits into hub E. The manner in which trigger D detains the case B, is shown in fig. 2. When the trigger is pressed down, B is released and revolves half around. The spring, C, is attached by one end to A and by the other to B, thus causing the revolution. The music is



supported between the slotted holders. G. which are hinged to the sliding tubes, H. The latter are supported on the cross piece, I, which passes through the head of spindle A. The tubes, A, are connected by means of rods, J, with collar, K. When it is desired to spread the holders, G, further apart, so as to ac modate wider pieces of music, the tubes, H, are drawn out latterally, the rods, J, spread, and the collar, K, rises. L is a screw in the collar, K, which holds the latter, and its adjuncts in any desired position.

This is a very simple, cheap, and useful im-provement. In full size it is hardly twice the

Scientific American.

NEW-YORK, SEPTEMBER 6, 1856.

The Past and the Future.

With this number of the Scientific Ameri-CAN the labors of another year are added to those of the past, and we close the well-filled leaves of Volume Eleven to open the virgin pages of Volume Twelve.

Our record for the years 1855-56 exhibits a nost gratifying increase in the stock of useful knowledge, and a highly satisfactory state of progress in the arts and sciences throughout the globe. In our own country this progress has been more apparent and extensive th perhaps, elsewhere; for we have enjoyed the blessings of peace and a full measure of material prosperity. Europe, however, has been onvulsed with bloody wars-calamities whos influence upon the intellectual affairs of mankind is always baneful.

We return our heartfelt thanks to the noble host of patrons who have honored us with their attention and patronage during the year now brought to a close. They have our warmest wishes for their individual prosperity and success in all that can contribute to their hap-We have honestly endeavored to benefit them and thus to merit their approbation We have good reasons to believe that, in some respects, at least, we have been succeasful. It is under this belief that we pro ence another new volume, termined to labor with increased ardor, and, if possible, render ourselves and our journal ore and more useful in the world.

We cordially invite all our old friends to lend us their co-operation. We hope that each of them will endeavor to bring over some new recruits into the ranks of those who love knowledge and believe in its elevating power.

Route of the Mono

The utter defeat of the Woodworth Patent Bill at the late session of Congress is regarded with great satisfaction by mechanics, inven tors, manufacturers, and all classes of people throughout the country.

Those who labored against that iniquitou scheme may congratulate themselves upon the entire success of their work. The victory was most complete. Notwithstanding the vast sums of money which had been pledged to procure its passage, and the almost superhuman efforts that were put forth by its myrmidons, the Bill came far short of a suc No committee reported in its favor, and it did not even reach a second reading, much less s discussion, in either branch of the National Legislature. Had it reached the latter stage, yould, beyond doubt, as circumstances now show, have been rejected. Resolutions from many of the States instructing their represen show, have been rejected. tatives not to vote for it, denouncing the me nopoly, and requesting Congress to refuse its extension, had been sent in, besides petitions and letters from individuals, villages, towns, and cities in large numbers, all aided by the thunder voice of the public press. These had their proper effect, and the general feeling of the Members of Congress became adverse to the schemers.

The resulting consequences will be of the highest importance. On the 6th of December. -just three months from to-day-the Great Monopoly which for a whole generation has been a terror and a scourge to inventors and a cruel extortioner among the hard-working masses, will fall to the ground. A new and broad field for genius and industry will then be thrown wide open to all.

We derive great satisfaction in feeling that we have contributed, in some degree, to this noble result. All the means in our power have been long and faithfully employed towards its ent, as the readers of our colu well know.

All inventors having improvements in plan ing machines who have been driven to the caves by the Woodworth Monopoly, may now come forth from their hiding places.

All mechanics who desire to enter into th lumber-planing business may now make the necessary arrangements.

All machinists may now prepare to take or-

ing Machines.

All improveme ents hitherto locked up, b ause of alleged infringement, may now be put into operation

The demand for lumber-working machinery will be very large in December next. Those who are earliest prepared to take advantage of the great opening will be likely to reap the richest harvest.

In addition to the Woodworth Patent exension, several other attempts to revive and extend odious monopolies were strangled by Congress. Among these were McCormick's application for a renewal of his Grain Cutting Machine patent, which expired in 1848; Haypard's Rubber patent, expired 1853; He Iron Casting patent, expired 1849; Nock's Padlock patent, expired 1853. Whatever shortcomings may be laid to the charge of the late Congress, it is certainly entitled to the thanks and gratitude of the people for having refused to breathe the breath of life into the above hatch of monstrosities.

The only patent extension granted during the session was to Isaac Adams, Boston, Mass. for his printing press. This patent had alen extended seven years by the Commissioner of Patents, and would have expired in 1857. Its present extension, although a matter of little public importance, should never have been allowed. Congress has already made general laws for the government and protection of inventors. It ought not to dis-regard those laws for the special benefit of single individuals. In the cases of poor inventors who appeal for relief, let a sum of oney be donated, if need be. But let us have no suspension of tire honored laws, bringing ruin and injustice upon others, in order to be stow charities upon single individuals.

The Claims of Inventors.—Henry Cort, the Inventor of Puddled Iron.

The iron manufactures of England far surass those of any other nation—they co mand the wonder and admiration of the world. The yearly make of rolled and puddled iron of that country now amounts to 200,000 tuns -50,000 tuns of which are exported. years ago, instead of exporting wrought iron Britain was a large importer from Russia and Sweden, paying out annually about \$7,500,000; now it exports iron to these very coun-

What has produced such a great change and given England such sources of wealth and Not the policy of the government, but the inventive genius of Henry Cort, who was deeply wronged by government officials, comparative pover

We have already noticed this case in columns, and our remarks on it have been copied with approbation into several British ournals. The London Times, in a strong article, has advocated the claims of Cort's heirs, and there are some prospects of their being prosecuted to a successful issue.

Henry Cort was the inventor of puddling iron, and rolling it by grooved rollers: these were the greatest improvements ever ma the manufacture of wrought iron. The idea is too often held up by those who are not deeply versed in the progress of manufactures, that government favor is the great cause of their developement, in nations. This is a great mis-take; inventors are the great improvers of its more often throw factures; governmen impediments in their path than afford them assistance. In England, men are knighted, made Peers, granted pensions and high titles whose claims to such distinctions are but very barren-so far as they relate to the welfare of the country-in comparison with those of her inventors. Great warriors and orators, generally, are the recipients of government faors, not inventors and men of solid genius There are some honorable exceptions, to be sure; but the rule and custom has been to heap honor upon the descendants and relatives of the land Barons, and to overlook the claims and worth of the industrious classes.

Henry Cort did more to advance the real ss of England than Wellington, yet the heirs of the former are living in comparative indigence, while those of the latter are swathed with honors and revel in donated riches. This

ders for the construction of Woodworth Plan- is not just, nor honorable. England can af- same point or object. The movable telescope ford to be just and generous to her sons of us and industry; and the recent elevation of Mr. Strutt, a manufacturer, gives evidence of a forward step in the right direction. But the throne and the peers must elevate their policy higher still, if they would act wisely for themselves; they should admit the manu facturing and mercantile classes to a full communion of association founded on worth.

Every nation that is governed by a wise and just policy, will encourage and reward its inventors generously, but no nation on the face of the earth has yet done so; we include our great Republic among the number. We have opes of better things for the future; and we cope that England and the United States, who have been so largely benefitted, will do ju to the heirs of Henry Cort. Why can iron manufacturers start a subscription for the benefit of Cort's heirs, and thus show to the world that genius is appreciated, no matter upon what soil it flourishes?

Improved Potato Digger—By Silas Wool-on, Moodna, N. Y.—This implement consists of two large bars or levers, pivoted together in the center, somewhat like a pair of scissors. One of the bars is furnished with prongs like a fork, at one end, by which the potatoes are raised. The other bar is used as a fulcrum for the fork. The forked bar is slotted at its center, so that it may be drawn up or thrust down, and also hinged on the pivot. In use the operator thrusts the fulcrum bar into the earth, and holds it erect with one hand, while with the other he pushes the end of the forked bar under the hill and then bears down. The potatoes are in this manner all lifted out, and the dirt falls through the prongs. This apparatus renders the labor of potato digging comparatively easy.

ance for Milking Cows .- By William H. Whitman, of Bailey Hollow, Luzerne Co., Pa.-Consists of a square box the top of which is perforated with four holes, placed at the proper distance apart, to receive the teats of the cow. The insides of the holes are lined with a series of spring fingers connected with a cam, in such a way that when a small crank is turned the fingers will press the teats and cause the milk to exude. The operation resembles the ordinary process of hand milk-The milk falls to the bottom of the box and flows thence through a flexible tube to a pail or other receptacle.

Safety Gas Burner .- By Augustus R. Marshall, of Stratford, Conn.—This improvement consists of a safety attachment for gas burnners, whereby, whenever the gas is blown out by a current of air or otherwise, its escape will be immediately arrested, and waste or other bad consequences prevented. Without drawings it would be difficult to explain the parts. It will be sufficient to say that there an air chamber so connected with a valve, that when the gas is burning, the air chambe is expanded by the heat, and the valve thus kept open. But when the gas is extingu ed, the air chamber contracts, the valve falls and the gas is shut off.

Condenser for Steam Engines .- By John T. Denniston, of Lyons, N. Y .- The object of this invention is to complete condensation and obtain the vacuum at an earlier point in the stroke of the engine; also to expel the water and air from the condenser, (the condenser used being the wet condenser,) through separate channels and at a less expense of the power of the engine. The invention is adapted for river boatengines, in which the vacuum apparatus is above the water line, as well as for stationary engines, whose condensing apparatus is at a higher elevation than the source from whence the water for condensation is derived.

Instrument for Measuring Distances and Al-tudes.—By E. A. Crandall, of Friendship, N. Y .- This instrument consists of two telescopes, sight tubes, or other sighting devices, placed at certain fixed distances apart, on a suitable table. One of the telescopes is stationary, relatively to the table, and the other movable on a fixed pivot, in a line that forms a right angle to the stationary one, so as to be capable of being brought to bear upon the

has attached to it an index, moving over a graduated scale of distances on the table, by which, when brought to bear on the sam point or object as the stationary one, it indi estes on the said scale the distance of the The operation of the instrument is based upon the well-known principle in trigoometry, that when the length of the base of a right angled triangle is given, the adjacent angle formed by the hypothenuse serves to determine the length of the perpendicular.

Contrivance to Prevent Liquids Boiling Over By John Leiblong, of Waterbury, Conn., (assigned to Edward Brown and J. R. Case.) Consists in placing a conical shaped cap w in the vessel, said cap having an opening at its apex, over which a deflecting plate is The whole is so arranged that the boiling liquid will pass up through the open ing in the apex of the cap and striking against the deflecting plate, will run down again into the vessel. The liquid is thus effectually prevented from passing over the sides of the

Improved Fountain Pen and Indelible Pencil. —By Nelson B. Slayton, of Madison, Ind. —Office 290 Broadway, New York City.— This improvement consists of a hollow tube tapering to a point like a common ever-point-The point is slitted from its apex, for a short distance, up two or more sides. The tube is filled with ink, which, when at rest, remains confined, and cannot escape. But when the point is moved in contact with a sheet of paper, as in writing, the ink flows freely as fast as wanted, but no faster.

This contrivance moves over the paper with all the ease and smoothness of a lead pencil, yet the inscription made is with veritable ink. There are no nibs to catch in the paper, no spattering or blotting, no ink-stand to be coninually dipped into, and no valves to be reg-The instrument may be carried in the pocket like a common pencil. It is, in fact, a omplete pen, inkstand, and pencil, all corabined. By turning a nut at the cap the mark produced will be fine or coarse. The inventor informs us that he was led to attempt the invention of an improvement of this kind from an article published in the SCIENTIFIC AMERI CAN setting forth the need and advantages of an improvement.

Patented in the United States, Great Britain France, Belgium, etc., through the Scientific American Patent Agency.

Machine for Sorting out Ivory Combs.-By William Fosket and Benjamin S. Stedman, of Meriden, Conn., (assignors to Julius Pratt & Co.-In the manufacture of ivory combs the blanks are generally cut of as great length as the width of the elephant's tusks, out of which they are made, admits. Therefore there is always a great variety of lengths, and many of them are so nearly of the same size that it is difficult to detect any difference. mparing them closely, side by side.

It is desirable in putting the combs up in backages of dozens, more or less, to have all mbs in one package of the same The only way of sorting them exactly. heretofore employed, has been to pick them out by hand, which is a slow and tedious on, requiring great practic any considerable degree of skill. The machine now patented is intended to perform this operation of "sizing," as it is termed, with great exactness and dispatch.

It consists of a round table with a slot or groove cut through around its edge. slot is made in flaring form, being wider at one end than the other. The blanks are placed one at a time, across the head or movement part of the slot; there is a pointer in the center of the table, which then comes around and sweeps the blank along the surface of the slot until a point is reached where the slot is wider than the blank, when it falls through. Boxes are arranged beneath the slot, into which the different sizes fall, and thus are sep-

Such numbers as we have on hand, subscribers can have furnished them gratuitously, to complete their sets for binding, by address a note to this office



[Reported Officially for the Scientific American.] LIST OF PATENT CLAIMS

Issued from the United States Patent Office FOR THE WEEK ENDING AUGUST 26, 1856.

Evaporating Salt—Wm. G. Clough, of Newark, N. . i do not claim the individual parts of the above deribed apparatus, but, I claim the apron H. chamber B, and escape flues F E^* , arranged and combined with the A A A^* , in the manner and for the purpose specified.

wan A. A. ', in the manner and for the purpose specified.
Windmill.—Win. C. Chambers & Thos. S. Hargraves,
Brooklyn, N. Y. First, We claim attaching the plate
i, which supports the wheel, to the rudder plate, in such
manner as to allow it a viorating, rotary motion, wherey the mill is rendered self-regulating, substantially as
secribed.
Second. We claim the combination and arrangement of
the segment gear O. phinos P. drum Q. and weights M and
to any equivalent mechanism, for retaining and
olding the wind-wheel always in proper position, subantially as set forth.

HAND SEED PLANTEE.—J. Herva Jones, of Rockton il. I claim, the use of a hinge or joint B B, or its equiva-ni for connecting two single hand-planters at their tops to the purpose of allowing them like a pair of compasse contract and expand in their operation, as set forth.

PREVENTION LIQUIDS FROM SOLIDING OVER THE PREVENTION OF THE PROPERTY OF THE PR

STATES COME BLANKS—WM. Fosket and Henjamin J. Stedman, inssignors to Julius Pratt & Co.; of Meriden, John We claim the gradually receding edge, a arranged within or around, and inclining toward a rebate, so as to form a tapering opening. P. between them, with so the form a tapering opening. P. between them, with combined with a set of arms, G. G. rotating or otherwise average over the opening and with boxes, compartments, rother receptacles below, to operate substantially as and or the purpose set forth.

or other receptacles below, to operate substantially as and for the purpose set forth.

Sewing Machines—A. F. Johnson, (assignor to himself and F. A. Boushon, of foston Mass. I do not claim the feed motion described, and that although eccentric shuttle throwers have been used before I cannot find that the pivoted swinging eillipse or a thrower has been so combined with a cam which operates is at oget a quicker motion of the shuttle when the cam operates near the point and is throwing the shuttle forward through the loop than when it is drawing it back.

I claim the combination of a swinging ellipse as a shuttle thrower hims on a privot, with a cam on the driving or other rostsing shut, so operates and the properties of the pivot is shall move the shuttle faster or through a larger space in the same time than when it is bearing upon the other parts, for the several purposes set forth.

Second, I claim the combination of the rocker shaft and its arm, K. K. and connecting rod with the grooved cam, operating specified properties of the same time than the mean employed or varying the Phirty I claim the combination of the ronger shaft and leading hate, substantially as described.

Phirty, I claim the means employed for varying the claim the operating together for eving the required motions to the feeding plate, substantially as described.

Phirty is claim the means employed for varying the cocker shaft and raising or lowering a loose collar to which the connecting rod, p, is stucched.

GRAIS CLEANER AND SEPARATOR—Richard Ward of Edinburgh, Ind. I claim the combination and ar-rangement of the curved board, q q, with the slide, R R the chaff conductor, S, and the side, T T, substantially in the manner and for the purpose specified.

is manner and for the purpose specified.

Paux GATS—Caleb Winegar, of Union Springs, N. Y. claim my method of opening and closing gates by means the ratched form, E. she weight, K. or an equivalent overvention of the chains and rods, B.B. in the manner restantially as described.

Second, I claim my arrangement of wood and chain, N. onnected with the spring catch for the purpose of deching the latch, in the manner substantially as described.

without the employment of cores in casting, as set forth.
Authoratic Attackment to Gas Burners.—A. R.
Marshall, of Stratford, Conn. I claim, first, the combination with the thermostate p, and valve D of the catch n, on the bar n', and the system of levers h H, for the locking and unlocking of the valve, in the manner and for the purposes specified.

Second. Combining with the locking-catch n, or its equivalent, which is acted upon the thermostat p, and the catch j, so arranged as to lock the valve open until the catch n is set in operation by the action of the thermostat, and then to be moved out of the way by the catch n, substantially as described.

CURTAIN FIXTURES—Purches Miles, of Hartfordonn: I claim, the levers E E actuated by the coile springs F F. in the manner and for the purpose substantially as set forth and described.

HAND CORN PLANTERS—Cornelius Marteall, of Alba ny, N. Y.; I claim, the combination of the staff A.C. col-lar g, and spade A.B., with reservoir a a b b; the whole being arranged and operated in the manner and for the purpose described.

Manner set form.

Seamless Hostery—William Goddard, of New-York
City: I claim, the process or method of manufacturing
seamless hosiory of the form required for what is know
as seamless ituoular knitted fabrics, such as are knitted on
machines that knit the tubes of a uniform diameter, and
adding thereto the ribbed top, the heel, and the toe, by
hand knitting, or any equivalent therefor, as described.

LAYING OUT RAFFERS—Legrand Croftot, of Syracuse, N. Y. I claim, the combination of the adjustable expanding measure A B, with the adjustable bevel D and E, substantially as described, for the purpose specified. Also, in combination with the above, the fixed quare places sliding on the bowel P and E, substantially as specified and for the purpose set forth.

cified and for the purpose set forth.

HAY RAKE—Charles B. Carpenter, of St. Johnsbury,
VI., I am aware that a rake has been constructed with a
fixed head, (similar to the one which I employ,) into
which spring steel test are inserted, and drawn by power
applied to such fixed head; therefore, I do not claim
such a rake-head, nor such apring teeth.
Notiber do I claim uch a rake-head, nor such spring
teeth; neither do I claim the wheels or the handles by
which add rake in guided, nor the arms R. K. neither do
which and rake in guide, nor the arms R. K. neither do
for a such a such a such a such a such a such a
head B, the guide-ordo C C, the catch P, and the connecting of the tuge D D, to the brackets E E, by the links n. n.
or their equivalent device or devicen, arranged as described and for the purposes set forth.

MEASURING DIFFANCES—Binch A. Crandall of Friend-

MEASUREM DISTANCES—Bloch A.Crandall.of Friendship, N. Y.: I claim, the combination of the stationary tolescope B, the movable telescope C, with its index bar D, and index E, and the multiplying levers i J K, with their indexes i j k, and springs M and their respective scales e 6 o o p p and q q', all arranged as described and for the purpose set forth.

scribed.

Be acc.—Daniel M. Baird, of Warrensville, N. Y. (as., diamor to Nathaniel Potter, Eric County, N. Y.), I claim, change of the burden to Nathaniel Potter, Eric County, N. Y.), I claim, the hand of the burden the mangire! B. in the chamber in the shank of the burden, this I claim in combination with the washer, F, set seriew. G. and thumb piece. D. arranged in the manner described and for the purpose set forth. Second, I claim the manner of attaching the head of the burden to the spindie, L, by means of the thumb nut o, and collar, N : this I claim in combination with the chamber that receives the collar and series of the thumb nut o, in the manner substantially as subscribed for the purpose specified.

BEDSTEAD—Elias Howe, Jr., of Brooklyn, N. Y., I am aware that spring beds of various descriptions have here-tofore been made, and I do not claim the use of springs for such a purpose, but I claim, a spring-bed constructed of a series of springs which overliee each other, all combine documents of the belier, and connected to be the pipes. But I claim, claim, and arranged in an inclined position upon a bet bettom, substantially as set forth.

All Hearing Furnaves—John Liddle, of New York City. I claim, first, the construction of the main body of the furnace, substantially as described—lorning, by plates attached to the internal surface, a series of tubes around any vertical joint between the interior and exterior, and without the employment of core in casting, as set forth.

AUYOMATIC ATTACHMENT TO GAS BURNERS—A. R. Marchall, of Stratford, Conn., it claim, first, the combina-

described.

Brick Machines—Henry B. Ramsay, Indianapolis, Ind. I claim, first, the wheel A, cranks G G, and catches m m, in combination with the springs s, for the purpose of regulating the stroke of the knives K K, for cutting the clay at the top of the molds J, as described. Second. I claim, the sliding mold-table T, for the purpose of raising the mold to the grate under the clay box, when the same is constructed, arranged and operated in the manner and for the purposes set forth.

AMALGAMATOR—Alva M. Stetson, of San Francisco, Cal.: I claim, the employment of the boxes a a n. placed in vertical succession, when said boxes are fitted with tubes or pipes b b b, as described, for containing the quicksilver and distributing the water, as set forth.

quicksilver and distributing the water, as set forth.

MANUFACTURE OF LEAD FIFE—John Robertson, of Brooklyn, N. Y. I do not claim as my invention any part of the cylinder, nor of the dies, nor of the arrangement thereof in the cylinder, nor of the manner of adapting these to the hydraulic press, nor the mode of operation generally; all of which have been substantially described in the specifications of the patents of Thomas Burr, heretofrer referred to.

But I claim, the construction and arrangement of the core i, with the guide h h, in combination with the piston c, for the purpose set forth.

BEDSTEADS—Jacob J. Smith & Jona. H. Pugh, of Philadelphia, Pa. We claim, first, supporting the four main posts B B, of a bedstead, by screwing or otherwise inserting them so that they shall stand securely without connection with any rails, upon the base A; being held together at its corners by means of the tenons on the said posts—all substantially in the manner set forth and described.

posts—all substantially in the manner set forth and de-scribed.

Second. We also claim, adjusting the said platform or its oquivalent, to any required inclination—as described by means of the left and right serew shaft G, blocks F F, in-clined planes e e, disk H and plates K K, or their equiva-lents, as described.

elines, as described.

FOUNTAIN PER—Nelson B. Slayton, of Madison, Ind. I claim, the fountain-pencil, consisting of a tube taporing to a point, and silt from said point some distance up two or more sides; said tube being connected with an ink-reservoir, which is closed except at its connection with said tube, and from which the link is caused to flow through the said tube and down the cills thereof, and issue from with a turke of unitable character to reached an inscription in ink, substantially as described.

I also claim regulating the degree of fineness of the writing or marks produced, by means of a screw thread a, and cone b, on the exterior of the tube, and a nut d, carrying a conical cup d', fitted to the med screw thread and cone and acting in opposition to the elinsticity of the nibs, g of the tube—substantially as described.

MACHINERVYOR FILLING SEINE NEEDLES—Simon F. Stanton, of Manchester, N. H., (assignor to himself and I. M. Stanton, of same place): I claim, giving the needles a vibrating motion by devices such as described or their equivalents, in combination with the arm which delivers the twine, vibrated perpendicularly and traversed horizontally, by devices such as described or their equivalents, so as to deliver the twine across the score and around the tongue of the needle, substantially as described.

lents, so as to deriver the twine across the score and around the tongue of the needle, substantially as described.

Bilge and Leakage Water Indicators for Vescilla, and the leakage indicators, the sectional diaphragm spring C as arranged in relation to the chamber A, and the standard D, for the purpose described.

Apple Parers—Maryin Smith, of New Haven, Conn. Id on to telain the combination in the same machine, as such, of knives of different kinds, and operating in different ways, for the purpose of paring and alicing apples, it having been done many years since.

But I claim, first, the construction of a 'machine for paring and alicing apples, in such a manner that a vibratory or sellating motion may be given to the fork carry motion of the same, whereby I am enabled to use a paring knife that shall be automatic or self-acting in its operation, yet equally adapted to paring apples large or small. Second. I claim the knife man handle G, hinged and operating in such a manner that the adjustment of the cutting edge of the knife to the entire surface of the knife to the entire surface of the knife to the continuation of the fork carrying the apple.

Third. I claim the knife on the other surface of the knife of said pawl. the point of contact between the fork c, and the pawl H, or its equivalent, hinged at such a point with respect to the occillating centre of said pawl. the point of contact between the fork c, and the pawl H, thall recede from the oscillating centre of said fork c.

Dynamomerne—George & J. W. Gibbs, of Canton, O.

DYNAMOMETHE—George & J. W. Gibbs, of Canton, O. We claim, the register or pointed P. P., which shows the average or mean draft, in combination with the slot R. and pin S. or its equivalent, which overcomes the vibrating motion of the pointer L. shown on the dial, substantially as set forth.

Cupring—Loyall Gillotson, of Thompson, Ohio: I wish to be distinctly understood as not claiming the use of a cupping instrument, nor the employment of electricity for the reduction of disease in the human body, separately considered—the use of both, singly, having been long known to the medical profession.

But I claim, the within described apparatus, viz., the spiral wire of, disk H, and loop I, combined and stached to a cupping instrument for the propose of employing clectricity in conjunction with cupping, as an adjurant for diseased parts of the human body, as set forth.

Ball Carton for Thursday Profession.

BALL CASTON FOR TRUMES AND FURNITURE—Judson Knight, of Newark, N. J.: I do not claim the separate parts of the castor as my invention. But I claim, the combination of the points a a', and the ball b, working in an open socket c. in the manner and for the purpose substantially as described.

LAMP—Peter C. Guion and Paul K. Wombaugh, (assignors to Paul K. Wombaugh,) of Cincinnati, O.: We claim the elastic bulb or receiver f, surrounding and communicating at bottom with a hollow stem, be d, which supports and opens into the bowl, in the described combination with the air duct, g, having an inwardly opening valve, h, affording the described means of communication from the external atmosphere to the upper part of the bulb, or equivalent devices, for the purposes explained.

Boms Lance for Killing Whales—Christopher C. Beand, of Norwich, Conn. Patented June 2004, 1882; I claim the mode of outstaining the fuse rope in the fuse tube and preventing the fire outstaining the fuse rope in the fuse tube, and preventing the fire of the

DESIGNS.

SIX PLATE STOVES—N. S. Vedder and Ezra Ripley, of Troy, N. Y., (assignors to Sweetland & Little, of Crescent, N. Y.)

COOKING STOYES—N. S. Vedder & Wm. L. Sanderson of Troy. N. Y., (assignors to Sweetland & Little, of Crescent, N. Y.)

COOKING STOVES—N. S. Vedder & Wm. L. Sander son, of Troy, N. Y., (assignors to Sweetland & Little, of Crescent, N. Y.)

This is the last Number of Volume Eleven.

Our friends will please to renew their subscriptions promptly in order to procure the

oming volume complete. We do not employ traveling agents to canvass for us. This system we are obliged to condemn after a fair trial of it. We offer prizes as a stimulant to our friends to enter the field. Remember, we pay One Thousand Dollars cash on the 1st of January next. These are good chances for the employment of leisure hours

Volume Eleven Bound.

About two hundred complete sets of Vol ume Eleven are in the hands of the binder, which will be for sale at our counter next week. Price \$2.75. They may be sent byjexpress or mail to any part of the country.

When ordered by mail it is necessary that 75 cents extra be remitted to pre-pay postage, which is demanded in advance. Copies of Volumes 6, 7, and 10, bound, can also be furnished at the price specified above.

Great Britain, France, Belgium, Austria, Prussia, and Russia, are all densely populated countries, having large manufacturing mechanical, and agricultural interests. The Editors of the Scientific American are in weekly correspondence with their agents in Europe, in regard to patents in these countries. They are largely engaged in securing European patents, and will freely consult with those who wish advice upon this subject.

Don't Lose the Pirst Number.

The voluminous Index for the past year, which we herewith publish, together with the ornamental title page for binding with the volume, necessarily occupy a large portion of our space. But next week we commence a New Volume, and the first number will be an unusually valuable one. Let no one fail to renew his subscription promptly, for thus he will be secure against the loss of the first



Acetate of Lead 168
Acids 201
Agricultural Machine, Davis, "1 fig.
Ald Society, Uhildren's 267
Alr Spring for R. R. Care 20
Alcohol from Tomatons 28
Alloy, Metallic 30
Almance, Paragraphy. rom Tomatoes 83 stallic 33) , Perpetual 318 in Scapstone 104 minum, How to obtain 333 minum, American 305 m Mine 346

Apple Parer and Slicer, Maxam's, 1
hg. 217
Apple Parer, Carter's, 1 fig. 276, 286,
Acete Exhibition, Return of 43
Arms, Manufacture of Government
337
Artesian Wells 1 fig. 84
Assay Office 86
Attaching Horses to Vehicles 230
Augers 236
Axles, Wagon 214
Axles, Attaching Wagon Wheels to
214

214

Axles, Attaching Wagon Wheels to
215

216

217

Barometers, Bad 404
Basket, Cake 333
Bed, Slater, House's, 5 figs. 32
Bed, Alarm, Mouse's, 5 figs. 32
B

Basket, Cake 333
Baths, Electro-Chemical 299, 339, 563
Baths, Electro-Chemical 299, 339, 563
Bed, Alarm, House's, 5 figs. 32
Bed, Spring, Wright's, 1 fig. 340
Bed, Alarm, House's, 5 figs. 32
Bed, Spring, Wright's, 1 fig. 340
Beer, Ginger 318
Beer, Ginger 318
Beer, Ginger 318
Belling for Driving Machinery 14
Bench Hook 221, 1 fig. 280
Belling for Driving Machinery 14
Bench Hook 221, 1 fig. 280
Bound Rebort 318
Bench Glosk 21, 1 fig. 280
Bound Rebort 318
Bench Glosk 21, 1 fig. 280
Brick Machines, 1 fig. 281
Blacking for Foundries 104
Brick Conking's, 5 figs. 280
Brick Carbing for Carbing of Candles, Lard and Fallow 165
Candles, Lard Catvridge 373
Carving Machine 381
Caster, Gleason's, 1 fig. 177
Castings, Weight of by Patterns 19
Castings, Scouring and Coating with
Line 57
Line 58
Clamp, Hub 326
Clamp, Clothes, Towers', 1 fig. 389
Clapboards, Jointing, Baker's, 2 figs
16
Clasp for Leading Cattle, Welton's, 2
figs, 36

Coments 366
Cement for Cast-Iron Joints 233
Cement, Stone 238
Conter Vent Wheel, Bich's, 1 fig. 41
Centrifugal Action 1 fig. 200
Chair, Oabin 294
Chair & Experiment 337
Chair & Chair & Gabin 244
Chair & Chair & Gabin 24 Chair, Cabin 294 Chair Experiment 337 Chart of Chemistry 156 Chimney Cap, Camp's, 1 fg. 36 Chioroform 371 Cholera and its Remedy 3 figs. 184 Chuck, Universal, Neckerman's, 1 Churn, Lamb's, 1 fig. 382 Olamp, Carpenter's, Oliver's, 261, fg. 333 Cloth Folding Machine, Elliot's, 1 fig. 359
Clothing, Water-Proof 336
Clothes Pin Machine, Goddard's, 1 fig. 289
Coach Window, Silver's, 1 fig. 354
Coal Mining in Illinois 1 fig. 144
Cochineal 144
Coffee, Cost and Culture of 170
Coke, Manufacture of 168
Coke for Smelting Iron 332
Cold, To Break up 67
Colothar 144
Combs, Sorting out 411
Compass, Time 6 PS imes, 1 fig. 273
Condenser for Steam Engines 411
Coking Apparatus, Albu's, 214 1 fig. 273
Condenser for Steam Engines 411
Coking Apparatus, Albu's, 214 1 fig. 273
Condenser for Steam Engines 411
Coking Apparatus, Albu's, 214 1 fig. 273
Condenser for Steam Engines 411
Coking Apparatus, Albu's, 214 1 fig. 273
Condenser for Steam Engines 411
Coking Apparatus, Albu's, 214 1 fig. 273
Condenser for Steam Engines 411
Coking Apparatus, Albu's, 214 1 fig. 273
Condenser for Steam Engines 411
Coking Apparatus, Albu's, 214 1 fig. 273
Condenser for Comparatus Comparatus, 2 fig. 273
Comparatus, 2000 Comparat ing Apparatus, Demorest's, 2 figs

A SE

cooking Apparatus, Demorest's, 2 figs 3.1
Cooler for Beer Casks 342
Copper and its Uses 113, 181, 193
Corks, Securing in Bottles 230
Corks, Securing in Bottles 230
Corn Planter, Stoddard's, 2 figs, 76
Corn Planter, Bocklon & Fenwick's
1 fig. 388
Corn Planter, Bocklon & Fenwick's
1 fig. 348
Corn Planter, Denny's, 1 fig. 396
Cotton Gin, Fultz's, 2 figs. 64, 270
Cowdee Gun and varnish 199
Crane, Burnet's, 1 fig. 321
Crimping Apparatus, Fetter's, 1 fig. 299
Currants, Culture of 240

D Securing in Monu-Daguerreotypes. Securing in Monuments 1 fig. 136
Daguerreotypes for Stereoscope 2 figs. 227
Decoarbonizing Steel Plates 27
Decodrizor, Cheap 378
Joseph Agento, 33, 404
Distincting Agento, 33, 404
Doors, Connecting, Brown's, 16g. 152
Drawing Instrument 1 fig. 205, 39;
Dredging Machine, Howard's, 1 fig. 304 Dredging Manual Street Street

Ears, Artificial 390
Electrotypers, Advice to :51
Engines, Farm Steam 2
Engines, Oscillating, Reed's, 5 figs. 36 Engines, Ignition 99 Engines, Beam, Doyle's, 1 fig. 104 Engines, Steam, Johnston's, 3 figs. 129 Engines, Hot Air, Ericsson's, 1 fig. 180

manns, Hot Air, Ericson's, 1 fig 189 180 Engines, Steam Fire 228, 233, 284 Engines, Cornish 244, 243, 369 Endines, Steam and Ether Combined 251 Engines, Steambart Fire 285 Engines, Boctary 367 Engines, Botary 367 Engines, Steam 374 Engines, Hydro-Steam 380 Engines, Qualifications for 397 Engraving 316 Engraving 316

Fair American Institute 45, 53, 61, 69, 77, 80
Fairs, Agricultural 348
Falling Bodies 249
Fastoners for Doors and Windows 253
Fastoners for Boors and Windows 253
Fastoners for Boors and Windows 263
Felit Guide for Paper Machines, Wait's, 1 fig. 352
File Blanks, Rolling 294
Files, Sharpening with Acids 344
Files, Sharpening with Acids 344
Files and Cooler, Warner's, 1 fig. 364
Files Arms 22, 397
Fire Arms 22, 397
Fire Arms 22, 397
Fire Regulator for Steam Boilers 253
Fish Hook 270
Fish Eggs 300
Flannel. How to Wash 134
Flannel. How to Wash 134
Flannel. To Frevent Pulling 135
Flour Inspection of 225
Flour Inspection of 255
Flour Inspection of 255
Flour Transfer, Krider's, 3 fig. 56
Fornarians, Window, Casey's, 518, 2 figs. 364
Fruit Preserving 43
Fuel Cutter, Daniels & Baymond's, 1

364
Pruit Preserving 43
Fuel Cutter, Daniels & Baymond's, 1
fig. 228
Fur. Preserving 225
Furnace 502
Furnace for Repairing B. R. Bars
501 urnace, Hydraulic, Leeds & Smith, 1 fig. 401

Gas, Cost of 82
Gas Regulator, Kidder s, 1 fig. 100
Gas, Lighting 165
Gas Burners 2 figs. 182
Gas Retort 302
Gas, Puritying 349
Gate, Adjustable, Lumirs, 1 fig. 12
Gate, Adjustable, beers, 2 figs. 108
Gate, Tidals, Flanders', 283.1 fig. 316
Gate, Water 349
Gate Store St Glue 259 Glue, To Make from old Leather 3 ycerine 80
ycerine in Lung Diseases 149
ild Separator, Kent's, 2 figs. 81
ild and its Uses 205, 213, 221, 229
ild Washer and Amalgamator 397
yvernor, Marine, Webster's, 2 figs.

Governor, Marine, Websier's, 2 figs. 138
Governor, Marine 309, 310
Governor for Saw Mills, Green's, 2
figs. 212
Greenor, Compound, Elliot's, 4 figs. . Governor, Compound, Elliot's, 4 g 300 Governor, Silver's, 1 fig. 356 Grain, African 406 Grate, Fire 214 Guano 20 Guano 30 Guano 30 Guano 30 Guano 40 Guano are of 326

H Hair Dye 230
Hams, Making 90
Hames Creaser 262
Harness Pads 295
Harvester 261, 278, 309, 317, 326, 333, 341, 349, 357, 365, 374, 405
Harvestern, Core Stalk 214
Harvestern, Core Stend 82
Hatch, Safety, Thompson & Morgan s

Clip, Carriage, Flowers', 341, 2 figs.

381
Clocks, Calender 261
Clock Cases 357
Cloth. To Extract Grease from 153
Cloth Stockhore 262
Cloth Folding Machine, Elliot's. 1
fig. 330
Clothing, Water-Proof 336
Clothing, Water-Proof 336
Clothing, Water-Proof 336
Clothes Fin Machine, Goddard's. 1
fig. 30 Window, Silver's. 1 fig. 354
Coal Mining in Illinois 1 fig. 144
Cochineal 144
Cochineal 145
Cocke for Same Minis 302
Later Patrickian 155
Hemp, Sisal 211, 219
Hemp and Flax Culture 235
Hoisting Riccks, Merrill's, 5 figs. 164
Hominy Machine, Fahrney's. 2 figs. 124
Cocke for Same Minis 302
Later Patrickian 155
Lorso Shoes, Towers', 3 figs. 146
Lorso Shoes, Steel Corked 171
Hose Coupling, Waterhouse's, 2 figs. 126
Lorso Romeltog Iron 382 12
Houses, French Method of Building I
fig. 216
Hubs, Wagon. Nycum's, 2 figs. 294
Hub Mortising Machine 389
Husking Thimble, Gould's, 1 fig. 302
Husking Machine 317
Hydrant 286, 315
Hydrophobia, Cure for 152, 209

I I.es, Consumption of 350
Incense 152
Indigo, Extract of 144
Infernal Machine, Russian 2 figs. 6
Ink, Marking 93
Ink, Writing 332, 374
Ink Stains, To Extract for Linens 336
Insects and Pestilence 30
Insects, Destroying 584
Inventions, Ancient and Curious 238, 246
264, 262, 269, 278, 291, 309
Incense 152
Incense 154
Incense 154
Incense 154
Incense 154
Incense 154
Incense 155
Insects Incense 155
Insects Incense 156
Insects Insects Incense 156
Insects Inse Iodine 394
Iron, Restoring Fibrous 34
Iron, Coating with Zine 57
Iron, Manufacture of 125
Iron, Enameling 246
Iron, Smoothing 296
Iron, Converting into Steel 364
Iron, Converting into Steel 364
Iron, Converting into Steel 364
Iron, Enameroving 408
Iron Steam Battery 123
Irory Bleaching Apparatus 405

Kilns, Lime 222
Kiln Drying by Steam 347, 355
Knift Cleaner 277, 465
Knittling Machine, Corwin's, 3 figs. 23
Knob, Door 365

Knife Cleaner 217, 805
Knitting Machine, Corwin's, 3 figs. 25
Knob, Door 365

Lamp, Entry, Pitts', 2 figs. 52
Lamp, Earty, Pitts', 2 figs. 52
Lamp, Earty, Pitts', 2 figs. 52
Lamp, Lard, Hays', 2 figs. 100
Lamp, Oli, 32
Lamp, Spirit, Bennett's, 2 figs. 140
Lamp, Mold for Glass 405
Lanterns for Hunters, Schaefer's, 1
fig. 183
Lathe, Burnett's, 2 figs. 140
Lathe, Power of Hunters, Schaefer's, 1
Lathe Chuck, Borton's, 1 fig. 241
Lathe Chuck, 253
Lathe, Prismatic 246
Lathe, Prismatic 246
Lathe, Prismatic 252
Lathe, Prismatic 266
Lathe, Turning, Oarpenter's, 1 fig.
Lathe, Turning, Oarpenter's, 1 fig.
Lathe, Turning, Oarpenter's, 1
Lavender 226
Lavender 226
Locomotive, Hot Air 252, 307
Locomotive, Hot Air 252, 307
Locomotive, Link Motion for, Uhry
& Luttens, 5 figs. 256
Locomotive, Oan Burning 394
Locomotive, Oan Burning 394
Locomotive, Oan Burning 394
Locomotive, Dummy 378
Lock, Safety and Alarm, Schneider's
2 figs. 146
Locomotive, Dummy 378
Lock for Safes 7 safe's, 5 figs. 268
Lock for Safes 7 safe's

M Maccaroni, To make 202
Marble and Marble Sawing 164
Marble Sawing 164
Schmidt's, 1 fg. 169
Marble Sawing Machine 214, 238, 261, 365
Marble Sawing Machine, Schrag's, 2
Marble Sawing Machine, Cole's, 1 fig. 305
Marble Sawing Machine, Cole's, 1 fig. 305
Marble, American 340
Matches, Composition for 212
Matches, Friction 350, 387
Messuring Distances 411
Messuring Instrument, Young's, 2 figs. 232 Messuring Distances 111
Messuring Instrument, Young's, 2 figs.
232
Measuring Instrument, Young's, 1 fig.
300
Meats, Effect of Heat upon 152
Meats, Curing 219
Meats, Curing 219
Media, Curing 219
Mediadeons, Hunts', 1 fig. 112
Melodeons, Hunts', 1 fig. 112
Melodeons, Slotting Reed Boards for
325
Melodeons, Slotting Reed Boards for Melodeons, Slotting Reed Boards for 325
Merrimac, Steam Frigate 267
Mercury, Test for 347
Metal, New 112
Metals, Experiments with 251, 269
Mille of Wax for the Skin 144
Mille, Concentrating 405
Mille, Concentrating 405
Mille, Grain, Painter's, 1 fig. 196
Mill, Sugar 306
Mill ton 8, Dressing, Draper's, 2 figs.
Millstones, Dressing 294
Mint, U. S. 368
Molding Machine, Schevenelle's, 2 figs. 76
Mop Head, Barnes', 1 fig. 156

Molding Machine, School could be figs. 76
Mop Head, Barnes', 1 fig. 156
Mop Head, Barnes', 1 fig. 156
Mortar Mixing 253
Mortising Tool 239
Motiors, New 38
Motive Agents, Hot Alir 185
Motion and Heat 313
Mowing Machine 294
Mowing Machine Trials 350, 366
Music Rack 468
Music Rack 468
Music Hack 468
Music Hack 187
Mowing Machine Trials 350, 366
Music Hack 187
Music H Needles, How they are Made 206 Nitrate Ammonia 24 Nipper Blocks, Whippile's, 5 figs. 208 Numeration and Measurement 134

Numeration and Measurement to O
Observatory 15
Odometer 397
Oil and Fuel for R. R. 65
Oil Cake and Cotton Seed Oil 120
Oil of Aosegay 136
Oil Faratine 167
Oil Cotton Seed 259
Oil Case Apparatus 317
Oil Case Apparatus 317
Oil Case Of Case 187
Oil Clarifying for the Hair 408
Omnibus, English 1 ftg. 588

Ointment for Chapped Hands 176 Ovens, Baker's 296 Oxyd of Tin as a Polishing Powd 144

Paddle Wheel 465
Paints, Inks, Dyes, &c. 397
Paper from Wood 78
Paper, Mosel 121
Paper and Paper Making 381
Patent Laws, Reform of 101
Patent Laws, Defects and RePatent Laws, But Patent Laws, Beform of Patent Laws, Beform of 102
188

Patent Laws, Defects and Remedies 188
Patent Laws, Bill to Amend 188
Patents, Value of 109, 349
Petents issued in 1854 150
Patent Extensions 236, 562
Patent Bill, James', 192, 301, 307, 309
318, 323, 347
Patents, Woodworth 61, 66, 365
Patents, Reciprocity in 365
Patents Willows, Machine Date on 188
Peen Patents Patents 189
Peen, Fountain, White's, 4 figs. 136
Pen, Fountain, White's, 4 figs. 136
Pen,

273
en and Pencil Case 278
en and Pencil Case 278
en and Pencil, Indelible 411
'erfumery 218, 232
erpetual Motion, Willis', 139, 1 fig.
20 Perpetual Motion, Willis', 139, 1 fig. 201
Perpetual Motion 232
Photography, Progress of 85
Pianofortes, Driggs', 2 figs. 248
Pickpocket Detector 382
Pile Driver 238
Pinch Bar, De Graw's, 1 fig. 220
Pipe Clay 128
Pistol, Repeating 261, 373
Plane, Finishing, Hopper's, 1 fig. 196
Plane, Bevel, Devoe's, 1 fig. 316
Plane, Bevel, Devoe's, 1 fig. 316
Plane Bar, Machine, Killam's, 2 figs. 49
Planing Machine, Killam's, 2 figs. 246
Plaster and Ammonia 249

Patro and Ammonia 249 Plaster of Paris 312 Plaster, Combination, Hart's, 1 fig. 401 Plow, Evans, 2 figs. 124 Plow, Gang 214 Plow, Gang, Smith's, 1 fig. 393 Plow, Subsoil 259 Plow 238 Plers, Combination, Hart's, 1 fig. 40. Plers, Combination, Hart's, 1 fig. 40. Plow, Evang. 2 figs. 124. Plow, Gang. 214 Plow, Gang. Smith's, 1 fig. 393 Plow, Subsoil 269 Plow 333 Plow, Steam 364 Plow Handles, Bending, Avery's, 1 dig. 288

Plow. Stoam 364
Plow Handles. Bending, Avery's, 1
ft, 289
Pocket Book 536
Portfolio for Music 333
Pointoes, How to Plant 373
Pointoes, Tronze 406
Power of Falling Water 208
Press, Cotton, Glover's, 2 figs. 28
Press, Brop. Peck's, 1 fig. 137
Press, Pronching 238
Press, Hay and Cotton, Ingersoll's 1
fig. 233
Press, Punching 238
Press, Hay, Fay's, 1 fig. 357
Press, Printing 381, 389
Propeller, Low's, 2 figs. 390
Propulsion of Vessels, Whittaker's, 1
fig. 186
Pump, Clark & Grasy's, 2 figs. 1
Pump, Clark & Grasy's, 2 figs. 1
Pump, Clark & Grasy's, 2 figs. 1
Pump, Clark & Grasy's, 1 fig. 318
Pump, Force, Lewis', 2 figs. 217
Pump, Force, Joylay's, 1 fig. 318
Pump, Hotary, Lindsoy's, 1 fig. 319

4 figs. 384

Punching and Shearing Machine,
Davis & Stephens', 2 figs. 65

Punching Machine 294

Q Quadrant 331 Quarrying Machine 353

Quarrying Machine 353

R.
Rack, Music, Ward's, 30.2, 1 fig. 344
Raft, Life 34 Improvement in 107
Railroads, Improvement in 107
Railroads, Speed, 8c. 294
Rails, Rolling R. R., Brown's, 246, 3
figs. 308
Railway Chair, Tatlock's, 3 figs. 390
Raiks Teeth Machine 342
Rakes, Horse, Mart's, 1 fig. 399
Rakes, Horse, Mart's, 1 fig. 392
Raking Attachment to Reapers 261
Rats, To Expel 193
Rattleanake Bite, Cure for 229
Raking Machine, Dorsey's, 1 fig. 305
Roaping Machines, Trials in France
466
Roaping Machines, Trials in France
468
Rosper Case, McCormick's 235 Machines, Trials in France 406 Reaper Case, McCormick's 235 Reef for Fishing Rods 389 Register Car 230 Report of Commissioner of Patents for 1855 137, 195 Rifles 196 Rock Drill, Goulding's, 3 figs. 121 315, Roofing Materials for Building Rope Machine 364 Ruler, Parallel 222

am, McNab & Carr's, Valve, Steam, McNab & Carr's, 3 figs. 241
Valve Gear for Oscillating Engines 245
Valve Gear for Oscillating Engines 246
Valve Gauge Cock, 1 fig. 318
Valve Motion for Oscillating Engines, Du Bois', 7 figs. 346
Valve Motion 381
Vaporgraphic Glassos 184
Varnish, Gold 299
Varnish, Gold 299
Varnish, Copa 291
Vessel, Ris of 361
Veterinary 273, 281
Violin Bow 294
Vise, Johnson's, 5 figs. 122
Vise, Florey's, 1 fig. 300
Vise 341, 405 Safes, Fire-Proof, Holmes & Butler's, 3 figs. 73 Salt 313 Safes, Fire-Proof, Holmes & Butler's, 3 figs. 33

Safes, Safes, Fire-Proof, Holmes & Butler's, 3 figs. 33

Salt to Remove Ice 164
Salt to

Patent Claims.

B

296
Soparator, Grain, Belchambers', 1 fig. 39
Sewing Machine, Cowperthwaite's, 2 figs. 89
Shade Fixture 349
Shading, Straightoning 186
Sheot Iron, Glazing 186
Shingle Machine, Leavitt's, 2 figs. 65
Shingle Machine, Leavitt's, 2 figs. 65
Shingle Machine, Palmiter's, 2 figs. 67
Shingle Machine, Palmiter's, 2 figs. 67
Shingle Machine, Palmiter's, 2 figs. 67
Ship's Knees, Testing 373
Shirred India Rubber Goods 229
Shoeing Stool for Blacksmiths 339
Shirred India Rubber Goods 229
Shoeing Stool for Blacksmiths 339
Shot Tower, Cast-Iron 77
Shot, Discovery of Making 102
Shutter, Iron, Fagan's, 390
Sifting Apparatus 233
Signals, Drawbridge 229
Signal and Color Blindness 272
Silk, How to Wash 182
Silk, Manufacture of Sewing 294
Silver, Extracting from Lead 1 fig. 88
Silver, Calorated 241
Silver, and its Uses 245, 254
Silate Frames 253
Silver and its Uses 245, 254
Silate Frames 253
Slate, Writing, Artificial 365
Slate, Writing,

mut Macma-inow Shoes for Wheelee 16 figs. 169 to 182, 387 to 18 figs. 169 to 18 figs. 169 to 18 figs. 187 to 18 figs. 1

Sounding Instrument, Brown's, 5 figs.

Speed, Varieties of 35
Spheriotype 309
Sponges, To Clean 121, 1 fig. 232
Spring, Door, Westcott's, 1 fig. 232
Spring, Door, Smith's, 1 fig. 232
Spring, Door, Smith's, 1 fig. 235
Spring, Door, Smith's, 1 fig. 246
Spring, Door, Smith's, 1 fig. 246
Spring, Door, Smith's, 1 fig. 26
Spring, Door, Smith's, 1 fig. 26
Spring, Door, Smith's, 1 fig. 26
Spring, Door, Smith's, 1 fig. 12
Stalk Cutter, Hocage's 3 fig. 31
Staw Machine, Kennedy's 6 figs. 4
Stave Machine, Smith's 3 figs. 31
Steamship Great Eastern 74 4 figs. 336 Zinc and its Uses 162 Zinc Paint 185

team hyperia 190
steamship Great Beauch
336
336
Steamship Persia 190
Steamship Adriatic 52
Steamship, Iron 246
Steamship, Iron

Siere Plates, December 27
Siereoscopic Book, Mascher's, 1 fig.
25
Stone, Artificial 40, 301
Stone Dressing Machines 117, 365
Stone, Coloring 176
Stoves 230, 261
Stoves, Foering's, 1 fig. 270
Stoves, Soldering Iron 301
Stoves, Gas, Starrett's 1 fig. 404
Straw Cutter, Clinton's 2 fig. 31
Stoves, Gas, Starrett's 1 fig. 405
Strychnine, St. John
& Brown's 1 fig. 239
Strychnine, Antidote for 378
Strychnine, Antidote for 378
Stump Extractor, Creighton's 286 1
Stump Extractor, Creighton's 286 1
Stung Extractor, Ruggles' 1 fig. 320
Sun, The 322, 331, 355, 363, 395
Surgical Instrument 405

Table, Extension, Curley's, 1 fig. 340
Tanning, Black Oak Bark for 197
Telegraph from Eng. to Australia 3
Telegraph, History of the 19
Telegraph, Frinding 270, 277
Telegraph, Prinding 270, 277
Telegraph, Prinding 270, 277
Telegraph, Health and 197
Telegraph, History of the 19
Telegraph, Health and 197
Telegraph, House, 190, 341
Telegraph, House, 190, 341
Thawing Machine 239
The Annual Machine 239
The Annual Machine 239
The Annual Machine 235
Times For the 197
Times and 197
Toole Glass 1 fig. 278
Toole Glass 1 fig. 278
Toole Sharponing 163
Toole, Watchmaker's 236
Tool, Watchmaker's 236
Trap, Rat 239
Trap, Fly 374
Trees, Rotting Down 341
Trees, Restoring 233
Trunk, Wardrobe 294
Tubes, Roving, Sargen's, 1 fig. 310
Tubes, Metallic 365
T T

Bakers, Coal Heating 330
Bands, Elastic 330
Bands, Elastic 330
Bank Notes, Blanks for 386
Barrel Head Machine 282
Barrela, Handling 314
Bars, Repairing R R 238
Base plece 346
Bars, Repairing R R 238
Base plece 346
Ba

Scales, Weighing, Kelley's, 213, 1 fg. 286 sea. Weighing, Mills & Bissell's, 28 water Gate, Moore & Hanyon's, 1 fg. 286 sea. Weighing, Mills & Bissell's, 28 water Gate, Moore & Hanyon's, 1 fg. 286 sea. Weighing, Mills & Bissell's, 28 water Gate, Moore & Hanyon's, 1 fg. 286 sea. Platform, Strong & Ross', 2 fg. 389
Scarlet Fever, Treatment of 211
Screw Fastening, London & Albis Scarlet Fever, Treatment of 212
Screw Fastening, London & Albis Scarlet Fever, Treatment of 213
Screw Fastening, London & Albis Scarlet Fever, Treatment of 213
Screw Fastening, London & Albis Scarlet Fever, Treatment of 214
Screw Fastening, London & Albis Scarlet Fever, Treatment of 216
Screw Fastening, London & Albis Scarlet Fever, Treatment of 218
Scade Janier, Willard's, 1 fg. 379
Seed Planter, Willard's, 1 fg. 389
Seed Planter, Willard's, 1 fg. 389
Seed Planter, Willard's, 1 fg. 389
Seed Planter, Stimson's, 2 fg. 409
Seed Planter, Stimso Cables, Chain 234
Caldrons 186
Caldrons 186
Caldrons 186
Caldrons 186
Caldrons 186
Candle Might and the Caldrons 186
Candle Might and the Caldrons 186
Candle Hipping Machine 230
Candle Hipping Machine 230
Candle Hipping Machine 230
Candlesticks 166, 178
Candlesticks 166, 178
Candlesticks 166, 178
Cannon, Charging 362
Carding Machines 226, 246
Cardron, Fluid 289
Cardrons, Fastenings for 386
Carriages 322
Carpets, Lining for 242
Carpets, Lining for 242
Carpets, Eastenings for 386
Carriages Models, Hanging 82
Carriages Models, Hanging 82
Carriage Whools, Boxing 218
Carriage Whools, Boxing 218
Carts, Woighting 238
Carts, Woighting 238
Cartiages, Fixed 370
Carriage Opener 290
Carving Machine 114
Cars, R. R. 256
Cars, Roplacing on the Track 170
Car, Extension 144
Car Whools, 200
Cart Whools, Cooling Cast Iron 18
Castings, Metal 164
Castings, Chilled 226
Carlon for Backs of Settees 258
Callars, Constructing 292, 250
Cement, Rooding 354
Centrolineads 352
Chain Lockor Fipes 74
Chain Lockor Fipes 24
Chairs, Shipe Cabing 294
Chairs, Shipe Cabing 294
Chairs, Bottoms of 314
Chairs, R. R. 394
Cha Accordeons 294
Accordeons, Valves for 370
Acid, Sulphite of Lime 42
Acid, Sulphite of Lime 42
Acid, Polophoric 266
Adding numbers 82 402
Air Power Machine 10
Air Cock for Steam Heating Apparatus 25
Alarmo, Burglars 65, 102 (2c)
Amalgamator 42, 106, 138, 314, 394 412
Anchor Stoppers 26
Annunciantor for Hotels 266
Apple Parer and Slicer 106, 274, 282
330, 394, 411 (2)
Apple Culter and Corer 346
Artosian Wells, Boring 402
Ah Sifter 294
Apple Culter and Corer 346
Artosian Wells, Boring 402
Ah Sifter 294
Anh Leaching Apparatus 208
Augers, Cranle piece for 122
Awi Hati 250-acc 25
Awing for Horse, 256
Awing for Horse, 256
Axio Sox, Turning 346
Axles, Car 186, 266
Axles, Car 186, 266
Axles, Attaching Thills to 154, 218
Axles, Attaching Thills to 154, 218
Axles, Attaching Thills to 152, 210
Axles, Securing Shafts to 82 (2c), 194, 338

Clock Froms 144, 262, 274 (2), 346 (2), 178 (Clocks, Calendar 258 Cloth Folding and Measuring Machine 10, 114 (Cloth Stretching Rollers 106 Cloth, Elastic Rubber 225, 282 (2c) Cloth, Stretching 758 (Cloth, Coding with Paint 322 (Cloth, Rubbing and Pollshing Painted 322

Daguerreotype Cases 194
Daguerreotype Cases, Hinge for 178

S. W.

Duguerreotype Plate Holder 42, 58
Daguerreotype Plates, Coating 164
Daguerreotype Mats, Urnamenting 164
Daguerreotype Mats, Urnamenting 164
Dampers for Color Stowes 385
Dampers for Chimneys 378
Dams, Constructing 384
Decoloring Tompound 298
Dasign out, Wood 226
Dasign out, Wood 226
Dasign Stown Wood 226
Dasign Stown Wood 236
Das

170

Oors, Hanging Double 146

Oors for Ovens and Stoves 290

Oor Stay 384

ough Making and Kneading 346

ovetailing Machine 2, 88, 902, 218, 304

vetailing Machine 2, 88, 902, 218, 304

vetailing Mynesis for 314

rawbridge, Floating 236

awer Pulls and Boring Machine 74

Hilling and Boring Machine 74

Hilling and Boring Machine 386

Drills, Grain 338
Drills, Rock 394, 402
Druns, Hoisting 288
Dust Deflector 50
Dust Excluding from B. R. Cars 292
Dynamometer 412

Dye Stuff 822
Dynammeter 412

Eave Trough 133
Electoral Circuit Breakers 133
Electrotyping 2
E Excavators 50, 145, 218, 274, 306, 322 Extracts, Making 218

Fabrics, Printing 274
Fabrics, Cutting Pile 106
Fabrics, Cutting Pile 106
Fabrics, Water Proofing 402
Fabrics, Woven 122
Fats, Saponifying 330
Fastening, Boor 104, 280, 274, 282
Fastening, Blind 106, 282, 288
Fastening, Boor Knob 250
Fastening, Sash 47, 290
Faucet, Files 198, 368
Faucet, Weighing Attachment for 82
Faucet, Files 198, 296
Faucet, Inverting into Fluids under
Fressure 37
Fester 88, 183
Festening 122, 250
Festiles, Flaning 122, 250
Festiles, Sawing 282, 293, 346
Festiles, Taning 122, 250
Festiles, Sawing 282, 293
Festiles, Sawing 282, 293
Festening, Sask 402
Festiles, Sawing 285
Festiles, Soldering 242
Festilizers, Soldering 242
Festilizers, Sowing 266
Filter 34
Filter, Thermo-udoric 54
Filtering Medium 363

s: 994 r; T14 r, The rmo-udoric 34 x; Sugar 63 ring filedium 363 Cutier 172, 250 Blank Bollon 250 (Blank Bollon 250 (Ce), 146 (2c), 154 (2c), 158 (3c), 244, 242, 258; 268, 274, (2c), 244, 242, 258; 268, 274, (3c), 338, 346, 354 (2c), 382, 370, 386, (file)

Furnaces, Annealing 298, 338 Furnaces, Glass 314, 370 Furnaces, Gas Consuming 314 w 314

Gas Begulator 58, 290, 314
Gas Berackets 66
Gas Burners 22, 154, 256, 396, 282, 412
Gas Holders 74
Gas Apparatus 114
Gas Huminasting 146
Gas Guesting and Cooking by 202, 218,
Gas Coustamers 202
Gas Coustamers 203
Gas Meter 274
Gas Generators 298
Gas Generators 298

Gas Ovene 255
Gas Moter 274
Gas Generators 298
Gas Retort Cleaners 298
Gas Retort Fastening 298
Gas Retort Feeding Apparatus 334
Gas Fetting Apparatus 334
Gas Fitting, Resembn and Tapping 346
Gas Fitting, Resembn and Tapping 346
Gas Heater 370
Gates, Farm 42 (2), 169, 178, 186, 218
235, 230, 233, 334, 412
Gates for R. R. Crossings 122

Gates, Flood 250
Gates, Hanging 282
Gates for Pillumes in Water Power 346
Gates for Pillumes in Water Power 346
Gates for Pillumes in Water Power 346
Gates for Steam Believe 114, 412
Gauge, Steam Pressure 332, 346
Gauges, Garpenters' 442
Gauges Cock, Steam 18
Guards for R. R. Cars 138
Guards for Steam 18
Gear Wheels, Cutting Teeth of 90
Generators, Steam 202
Generators, Steam 202
Generators, Steam Engines 306, 322
Grant Deports 402
Governors for Steam Engines 306, 322
Greentors for Steam Engines 306, 322
Greentors for Steam Engines 306, 322
Grant Deport 10, 324, 250
Grant Deport 10, 324, 250
Grant Deport 10, 324, 320
Grant Deport 10, 324, 320
Grant Deport 10, 324, 320
Grant Binders 138, 378
Grauptle for Raising Sunken Bodies
Grate Bars 42, 102
Grates, Parlos 10

Srain Cloanes Strain Cloanes Strain Binders 138, 378
Grapple for Raising Sunken Bodies 402
Grate Bars 42, 162
Grates Parlor 10
Grates, Becomolive 170
Grates, Becomolive 170
Grates, Geomolive 170
Grates, Green Corn 185
Grater, Green Corn 185
Grater, Green Corn 186
Grater, Green Corn 186
Grater, Green Corn 186
Grater, Glundes 198
Grates, Huning 30, 362
Grating, Slupplementary 210
Grating, Illuminating 209
Grating, Illuminating 209
Grating, Huminating 209
Grindstones, Hanging 306
Grindstones, Hanging 308
Guides for Furbune Wheels 282
Guides for Sewing Machines 194, 370
Guides for Grates Percha Supplementary 194
Guides Grates Percha 322
Guita Percha Cleaning 306

Harvesters, Track Cleaners of 140
Head Rest for R. R. Cars 462
378 or Smoothing froms 18, 130, 378
Heaters, Hydraulic 178
Heaters, Water 330
Heating Feed Water Apparatus for Steam Holiers 18, 178, 284, 362, 366
Heating Feed Water Apparatus for Steam Holiers 18, 178, 284, 362, 366
Heating Buildings by Steam 22, 170, 210 (2), 218, 292
Heating Apparatus, Steam 96, 178
Hemp and Flax, Froparing 218
Hides, Tanning 354
Hiller, Cotion 234
Hinge 170
Hongs Shutter 210
Hoss, Shautter 210
Hoss, Shautter 210
Hoss, Shautter 210
Hook and Apparatus 258
Hominy Machine 10
Hook short 10
Hors Collars 122 (2), 322
Horse Powers 122, 234, 265, 364
Horse Shoe 250, 283, 354
Houses, Portable 210, 306
Hulling Machine 130, 366
Hulling Machine 130, 366
Hulling Machine 130, 466
Hulling Machine 130, 468
Hulder, Cotton Seed 19

Hydrants, Waste Device for 266

I
Ice, Raising from Rivers 82
Ice Breaker 386
Index, Lettering 384
India Rubber 258
India Rubber 258
India Rubber (Iceaning 322
India Rubber, Treating 394
Indicator for Vessels 412
Indicators, R. R. Station 90
Inking Apparatus 50
Inkistands, Attaching to Deaks 394
Instruments for Determining Latitu
and Longitude 18
Iron Scraps, Remelting 154
Iron Scraps, Remelting 154
Iron Pidding 218
Iron Pidding 218
Iron Pidex, Welding 330
Irons, Smoothing 232, 339, 338
Iron, Swangi 492
Irregular Forms, Cutting 218, 298
Ivory Bleaching 114, 402

Jacks, Supporting 82
Jacks, Lifting 90
Jacks, Screw 170
Jockey, Dumb 336
Joint for Connecting Shafts 170

Kottles, Making Brass 258, 290, 346 Keys for Connecting Rods 10 Knives, Scouring 106, 274, 402 Knives and Forks 130 Knives for Cutter Heads 290 Knifes and Pencil Case 202 Knifes and Pencil Case 202 Knifes and Sachines 10, 13, 34, 80, 74, 90 305, 364, 378, 386 (2) Knitting Machines 10, Needles for 514 Knobs, Door 362, 370

Ladder, Fire Escape 200 Ladde for Molten Glass 232 Lange (See Molten Glass 232 Lange 66, 202, 412 Lamps, Argand 43 Lamps, Lard 43, 222, 362 Lamps, Attaching Extinguish 114 Lamps, Attaching Extinguish 114 Lamps, Extinguishers for 122

Lamps, Rosin Oll 210, 226
Lamps, Carcel 234
5 Lamps, Locomotive 236, 536, 354
Lamps, Locomotive 236, 536, 354
Lamps for Burning Gas 314
Lamps for Burning Glasses in 154, 178
Lanterns, Securing Gasses in 154, 178
Lanterns, Securing Gasses in 154, 178
Lanterns, Fastening Lamps to 266
Lap Surface for Sheet Metal 239
Lasts, Securing and Releasing 238
Last Holder 314
Lathes 222, 274
Lathes 222, 274
Lathes 222, 274
Lathes 223, 275
Leather, Finishing 25
Leather, Finishing 26
Leather, Finishing 26
Leather, Finishing 26
Leather, Finishing 26
Leather, Softening 114
Leather, Shoe Binding 138
Leather, Hammering 162
Leather, Softening 178
Leather, Softening 178
Leather, Softening 178
Leather, Surfing 386
Leather, Surfing 186
Leather, Surfing 386
Leather, Surfing 186
Leather, Surfing 187
Leathe

Macaroni Server 346
Magneto Electric Machine 250, 402
Marble Sawing Machine 210, 74 (21), 236 (2), 236 (4), 236, 232 (2), 236 (2), 238 (4), 236, 232 (2), 236 (2), 236 (4), 236, 232 (2), 236 (4), 236 (4), 236 (4), 236 (4), 237 (4),

Miter Box 314
Modifying Focal Length of the Eye 122
Modifor Earthen Pots 234
Molding Circular Work 34
Molding and Pressing Building,Blocks 370
Moldings, Cutting Ornamental 26
Moldings, Cutting on Marble 170
Monumer 10, 382
Monumer 10, 382
Moseco, Figuring 234, 282
Morato, Figuring 234, 282
Morating Machine 26, 42, 74, 114, 146, 154, 218, 242, 386
Mortising Machine 26, 42, 74, 114, 146, 164, 218, 242, 386
Mortising Tool 170, 225
Mowing Machines, Shoc for 338
Mules, Self Acting 74, 306
Mules, Self Acting 74, 306
Mules, Self Acting 74, 306
Music, Registering 122
Music, Registering 122
Music Rack 298
Musical Notations 336
Musical Instruments, Reed 303

Nails, Horse Shoe 402
Nail Machines 314
Nail Machines, Feeder for 226, 394
Needles, Seine 34, 362, 412
Netting Machine 346
Nocturnal Emissions, Preventing 2
Nozzie for Exhaust Pipes 122
Nut Machine 66, 226 (2), 314 (2)
Nut Machine 66, 226 (2), 314 (2)
Nut, Securing in Ayles Nuts, Securing to Axles 306 Nuts, Polishing 314

Odometers 330, 394
Oils, Extracting 402
Oil, Vegetable 10
Oil, Cotton Seed 10, 56, 250
Oil, Press 130
Oil, Tress 130
Oil, Ground to receive Phologra
Impressions 256, 230
Oil, Lubricating 374
Oil from Blumen 394
Oil flow Blumen 394
Oil flow Stumen 394
Oil Box for Axien 136
Optical Instruments 25
Ore, Galena or Lead 122
Ore Washer 178, 218, 394
Organs, Parlor 305
Ovens for Cooking Stoves 18, 290
Ovens for Cooking Stoves 18, 290
Ovens for Baking Bread 9e, 376
Ovens, Parlor 356

Q Quadrant 330 Quartz Crusher 106

Paddle Wheels 122, 130, 234, 402
Paddle Wheels, Feathering 298
Padlock 138, 146, 334
Pads, Attaching to Saddle Trees 322
Paint Compound 394
Paper Feeding Machine 66, 154

Paper Stock, Washing 146
Paper Holding 186
Paper Holding 186
Paper Stoging Wall 202
Paper Folding 288
Paper From Straw 282
Paper Form Straw 282
Paper Machine, Guide 80r 250
Paper Cills 286
Paper Machine, Folding 266
Paying Machine 146
Paying Machine 146
Paying Machine 146
Paying Machine 138, 186, 210, 322
Paging Jack 282, 378 (2)
Paging Machine 138, 186, 210, 322
Paging Machine 138, 186, 210, 322
Paging Machine 138, 386, 370
Pan Holder 194, 386
Pen and Pencil Case 274
Pencussion Cape 322
Pessaires, Constructing 194
Photographs, Bath for 106
Photographs, Plate for Vise 178
Photographs on Japanned Surfaces
194
Photographs on Glass 306, 394
Photographs on Glass 306, 394
Photographs, Thining and Coloring
Phronology, Teaching 258
Planofortes 122 (2), 230
Phronology, Teaching 258
Planofortes 122 (2), 230
Pianofortes, Action of 18, 114, 234, 314
Planofortes, Legs of 290, 396 (2)
Picking Machine 18
Pickpocket Detector 372
Pile Driver 234
Pil Finning Machines, Dog for 2
Planing Machines, Foed Motion for
30, 189
Planing Machines, Cutter Heads for
114, 300
Planing Knives 226
Plater Compound 462
Plates, Metallic 18
Platforms, R.R. Car 234
Platforms, Safety 258
Platforms, Safety 258
Platforms, Supporters for 322
Plotting Instrument 338
Plows 43, 185 (2), 146, 186, 194, 202, 210 (2), 224, 266, 106, 314, 330, 362 (2)
Plows, Handles of 162
Plows, Draining 194
Plows, Draining 194
Plows, Draining 194
Plows, Draining 194
Plows, The Plotter of 195
Plows, Platform 195
Plows, The Plotter of 195
Plotter of 195
Plotter of 195
Plotter of 195
Polish Purniture 402
Polishing Machine 379
Portfolia 530 Polish, Furniture 402
Polishing Machine 379
Porte Monnaies 1e6, 230
Porte Monnaies 1e6, 230
Post Driver 224
Potato Driver 224
Potato Driver 234
Potato Planter 1e6, 278
Powder, Blasting 466
Press, Card 1e, 42, 58
Press, Seal and Stamping 18
Press, Printing 9e, 138, 242, 250, 354, 378 (2), 388
Press for Stamping Letters 1e6
Press, Copyling 34:
Press, Chopoling 34:
Press, Chopoling 34:
Press, Chopoling 34:
Press, Chopoling 34:
Press, Printing 234
Press, Chopoling 34:
Press, Printing 124
Press, Printing 124
Press, Proporting 234
Presses, Punching 234
Presses, Punching 234
Presses, Punching 234
Presses, Proporting 338
Projectiles, Monta 198
Printing Instrument for the Blind 338
Projectiles, Molds for 378
Projectiles, Molds for 378
Projectiles, Molds for 378
Projectiles, Molds for 378
Projectiles, Throwing 394
Propollers, Shaffs Boats 232
Pruning Machine 164
Puddle Ball Squeezer 238
Punching Machine 170, 290
Pug Mill 338
Punching Machine 170, 290
Pug Mill 338
Punpe, Force 10 Punching Machine 170, 290
Pug Mill 398
Pulleys, Spring 394
Pumpe 25, 106, 138 (2), 178
Pumpe 26, 106, 138 (2), 178
Pumpe, Force 10
Pumpe, Ships 34, 370
Pumpe, Vibrating 42
Pumpe, Double Acting 90
Pumpe, Botary 114, 130, 250, 522, 338
346, 384 (2)
Pumpe, Botary 164, 130, 250, 522, 338
346, 384 (2)
Pumpe, Recept for 122
Pumpe, Success for 120
Pumpe, Air Escape for 210
Pumpe, Machine 186
Pumpe, Regulating 250
Pumpe, Regulating 250
Pumpe, Steam 252
Pumpe, Operating Valves of 346
Pumpe, Wind 362

Radiators, Steam 42
Railway Bars, Rolling 242
Rail Compound 294
Rake, Hay 412
Rakes, Hay 412
Rakes, Hay 412
Rakes, Hay 412
Rakes for Reaping Machines 26, 346
Rakes, Horse 146, 202
Rakes, Teeth for 339
Raker, Harvester 114, 133, 178, 210, 259, 274 (21), 292, 354, 578
Raker, Harvester 114, 133, 178, 210, 259, 274 (21), 292, 354, 578
Raker, and Loading Machine 114, 234, 370
Ranges, Portable 162, 306
Ranges, Cooking 66, 290
Rasping Machine 38
Rattles, Policemens 90
Roach, Extension 50
Roaper, Rice 258
Reaping Machine 34
Reaping Machine 36
Reaping Machine 37
Reaping Machine 38
Reaping Machine 38
Resister, Telegraphic 170
Register, Telegraphic 170
Register of stoves 298
Register for stoves R

Saddles, Riding 370 Safety Apparatus for Steam Boilers

Scythe Fastening 58, 284, 282
Scythe Riffes 210
Seata, Carriage 185, 250
Seeding Machines 2, 42, 82, 130
146, 186 21, 186 (2), 286, 291, 293, 130, 162 (2), 186 (2), 226, 234, 274, 322 (2), 382, 346, 375, 412 (2), 282, 282
Sead Sowers 166, 19, 282, 283
Sead Sowers 166, 19, 282, 283
Sead Sowers 166, 19, 284
Sead Sowers 166, 19, 284
Sead Sowers 166, 284
Sead Sowers 166, 284
Sead Sowers 166, 284
Shades, Window Stenciling 170
Shafts, Wrought Iron 478
Shades, Window Stenciling 170
Shafts, Wrought Iron 478
Shears, Sheep 210, 282
Shear, Sheep 210, 282
Shear, Sheep 210, 282
Shear, Sheep 210, 282
Sheat Metal Working 266, 290, 298
Shells, Explosive 164, 234
Shields to protect Breastpins 338
Shingle Machines 10, 122, 164 (2), 210, 274, 282, 295, 384, 322, 354
Shingle Bolt 42
Ships Topmasts, Supporting 2
Ships Panking 334
Shift Collars 188, 282
Shoes, Lasting 82
Shot, Facting 82
Shutters, Double Panel 282
Shutters, Double Panel 282
Shutters, Doparating 322, 354, 378
Sifter, Coal 156
Signals, Fog 322
Siplas, R. R. 8es
Siftia, Dissoving 162
Silver, Separating from Tin Ore 394
Shafe for Azle Arms 210
Slate France 256 Signals, R. R. 3e6
Sificia, Discoving 102
Silver, Separating from Tin Ore 394
States 242
Stein for Axle Arms 210
Slate Frames 250
Slate frames 250
Slate the Bla. Attaching to Straps 370
Slate the Bla. Attaching to Straps 370
Slate Beautines 354, 378
Smow Clearer for B. R. 170
Soap Bolling 177
Soap Bolling 177
Soap Bolling 177
Soap Bolling 177
Soap Conductor 218
spike Machines 24, 122, 154, 126, 323
Spinning Frames 36, 324
Spinning Wheels 234
Spinning Wheels 235
Spikes Machine 64, 105
Spoke Shave 138, 250
Spokes, Driving 206
Spools 378
Spreaders, Lime and Guano 338
Springs, Car 10, 114

Spinits, Surgical 237.

Spoke Machine 66, 106

Spoke Shave 138, 250

Spokes Priving 266

Spokes Springs, Priving 266

Spokes Springs, Priving 266

Spokes Springs, Priving 267

Springs, Carl 10, 114

Springs, Opor 74, 202, 242, 258 (2), 402

Springs, Spiral 242

Stamp, Hand 462

Stamp, Self-Inting 242

Stamp, Guaging and Measuring 42

Stamp, Guaging and Measuring 42

Steam, Micromomising 43

Steel, Walniac 236

Steel, Working 330

Steel, Working 330

Steel, Working 330

Steel, Working 330

Steel, Manufacturing 304

Steel, Working 330

Steel, Manufacturing 344

Stope Polishing 186

Stone Channeling Machines 24, 362, 402

Stone Dolishing 186

Stone, Artificial 222, 394

Stone Dolishing 186

Stone, Artificial 222, 394

Stone Dolishing 186

Stone, Artificial 222, 394

Stone Polishing 186

Stone, Artificial 282, 394

Stone Polishin

 \mathbf{T}

Tallow for Candles 218 Tan Vats 162 Tallow for Candles 218
Tan Vais 162
Tanning Apparatus 10
Tanning Process 218
Tape Primer Percussion 370
Tapping Fluids 370
Tapping Fluids 370
Teappots, Casting Spouts and Handles of 50
Teets, Artificial 298, 330
Telegraphs 42, 138, 266, 274, 298, 370
Telegraphs 12de Gauges of 2
Telegraphs, Magnets for 266
Temples for Looms 194
Tenon Machine 66, 462
Tenoning Window Blinds 194
Tenon Concleat 206
Thimbles, Forging 390
Thimbles, Forging 390
Thrashing Machine 226, 322, 330 362
Thread, Trebling Single 10, 290
Thread, Winding 306
Throate Framer 82
Ticket Holder 90
Tide Wheel 82
Tile Roofing 114
Time Indicator 130
Time Keepers 362
Tire, Upsetting 82, 361
Tonguing and Grooving Machine 175, 186
Tonguing and Grooving Machine 175, 186
Tonguing and Grooving Machine 175, 186
Tools, Coopers' 98 Tronguing and Grooving Machin Tonguing and Grooving Machine Stools, Coopers' 98
Tools, Watchmakers' 322
Tools for Gutting Metals 338
Trade Marks 328
Trap Stench 178
Trap Roach 192
Trap, Rat 234
Trap, Fly 370.356
Treenail Machine 170
Trees, Felling 18, 236
Trunk Wardrobe 199
Trusses, Hernial 10, 226
Tubing, Gutta Percha 322
Tunneling Rocks, 226, 266
Turning Machine 354
Types, Printers' 26, 186
Types, Printers' 27, 186
Type Rubbing 114 Type Rubbing 114
Type Securing on Rotary Beds 386

Umbrella Sticks 98. 2

Umbrella Sticks 98, 218

Valves for Regulating Steam Bollers 2, 114, 146, 150, 326

Valves for Oscillating Engines 42, 242

Valves, Operating 128, 170, 222, 314, 188, 37
Valves, for Lock Gates 151, 218

Valves, as Cut-offs 151, 268, 338

Valves, as Cut-offs 151, 268, 338

Valves in Blower Engines 162

Valves and Stop 154

Valves, Motion of 234, 402

Valves, Motion of 234, 402

Valves, Motion of 234, 402

Valves, Side 269, 266, 366, 314

Valves, Side 269, 266, 366, 314

Valves for Hydraulic Engines 250

Valves, Gomplotling the Throw of 168

Valves, Gomplotling the Throw of 168

Valves, Attaching Stems to Conical

311

Valves, Safety 339

Valves, Attaching Stems to Conical 314
Valves, Safety 339
Valves, Pump 320
Valves, Pump 320
Valves, Tubular Elastic 328
Valves (och 328
Valves for Type-Casting Machines 77)
Valve Gear for Steam Engines 206
Valve Gear for Steam Hammere 191
Vapor Apparatus 164
Variable Exhaust for Engines 42
Vegetal le Fiber 42
Vegetables, Preserving 191
Vehicles, Three-Wheeled 178
Vehicles, Attaching Thills and Poles to 156, 266, 266, 266 Vehicles, Attaching Horses to 322, 328 Vehicles, Running Gear of 338 (2) elocimeters 138, 202 entilating R. R. Cars 66 (2), 82, 162, 25)

ventilating R. R. Carson (2), 82, 162, 251 Ventilating Buildings 74, 234, 250 Vensels 524 Vensels, Propelling 234 Vensels, Bounding Guard for 354 Vensels, Big of 278 Vensels, Booms and White Lead Chambers 43 Violar, Protecting 258 Violing, Cutting Fronts and Backs of

106 Violin Bow 290 Vises 50, 253, 282, 314, 338, 254, 402 Vise Bench 178, 242 Vise Handle 210

W

Wagons 202
Wagons Military 106
Wagons, Tongues of 282
Wagons, Extension 282
Walls of Buildings 314
Ware, Sheet Metal 394
Washboards 50, 154, 250 290
Weshing Machines 42, 50, 74, 218, 22, 314 (3), 338, 362, 394, 402
Washing Fibrous Substances 43
Watch Key 16
Watches, Independent Moyements of 346

346
Watches, Securing Pinions of 354
Watches, Securing Pinions of 354
Water Cooler and Filter 234
Water, Mode of Raising 288, 412
Water Closet 298, 386
Weather Stripe 266, 386
Weather Stripe 266, 386
Weavers Harness 146
Webs, without Weaving or Spinni
296

Webs, without Weaving or Spinning 226
Weighing Apparatus 288
Weighing Apparatus 288
Wells, Drawing Water from 254
Wheels, Carriage 462
Wheels, Variage 462
Wheels, Water 50, 106, 114, 234, 29', 352, 551, 791
Meels, Wind 162, 226, 242, 338
Wheels, Wind 162, 226, 242, 338
Wheels, Securing Tires to 346
Wheels, Car 362
Wheels, Car 362
Wheels, Car 362
Wheel Stopper 154
Wheel Stopper 154
Wheel Wrights Machine 202, 242, 332, 402

Wheelwrights' Machine 202, 242, 322, 402
Whiffletrees 58, 74, 378
Whiff Handlee 250
Whip Sockets 258
Whistles, Steam 242
Wick Holder 186
Wing 258
Wind Regulator for Organ Pipes 42
Windlasses, Shipe 26
Windmills 122, 135, 135, 282, 298, 314, 411
Windows, Car 306
Winnowing Machine 98, 154
Wire Outling 18
Wire Dish Covers 43
Wire, Painting 202
Wire, Covering with Gutta Percha
378
Wire, Overing with Gutta Percha
378

wire, Covering with Gutta Percha 378
Wood, Bending 218, 250
Wood Splitting 282
Wood Carving 378
Wool, Combing 106, 346
Wool, Treating 138
Wrenches 26, 34, 186 (3), 218, 234 (2), 242, 274, 386
Wrench for Gas Pipes 338
Wringers for Clothes 50

Yarn Dressing Frames 254 Yarn Felted 283 Yokes, Ox 378

